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Vacuum polarization of a massless spinor field in global monopole spacetime

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Abstract

We calculate the renormalized vacuum average of the energy-momentum tensor of a massless left-handed spinor field in the pointlike global monopole spacetime using point-separation approach. The general structure of the vacuum average of the energy-momentum tensor is obtained and expressed in terms of a □T 0 0□ ren component, the explicit form of which is analyzed in great detail for an arbitrary solid angle deficit. ©1999 The American Physical Society.